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[54] **SPATIALLY ALIGNED CONJUGATED COMPOSITION HAVING A THIOETHER BOND LINKAGE**

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[58] **Field of Search** 424/1.69, 1.53, 424/194.1, 196.11, 197.11; 530/323

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[57] **ABSTRACT**

The present invention is a spatially aligned conjugated composition which comprises at least one chemically modified substance which is immunologically representative of a prechosen infectious agent and provides a chemical constituent for entering into and forming a thioether bond; a plurality of chemically substituted metallic oxide particles which range from about 10–10,000 nanometers and are able to enter into a thioether bond and covalent linkage; and at least one thioether bond and linkage joining the metallic oxide particles in a controlled and spatially aligned manner to the antigen or hapten. The conjugated composition may be alternatively employed as an immunogen; as a vaccine; as a diagnostic tool and reactant; and as an analytical material suitable for testing the pharmacological activity of new compounds.

11 Claims, 8 Drawing Sheets